

**Workshop on
Dynamic Data-Driven Applications Systems (DDDAS)**

Dates: January 19-20, 2006

Location: NSF, Arlington(Ballston) VA

We recently completed the proposal review and award process of the Dynamic Data Driven Applications Systems DDDAS program solicitation (www.cise.nsf.gov/dddas), a multi-agency solicitation that involved multiple NSF Directorates, the NSF Office of International Science and Engineering and the Industrial Innovation (SBIR/STTR), as well as National Oceanic and Atmospheric Administration (NOAA) and the National Institutes of Health (NIH), and the co-operation of the EU Information Society Technologies (EU-IST) and the UK e-Sciences Programs. All NSF Directorates, the NSF OISE, NOAA, NIH and the Air Force Office of Scientific Research (AFOSR) contributed to sponsoring awarded projects.

DDDAS entails the ability to dynamically incorporate additional data into an executing application, and, conversely, the ability of an application to dynamically steer the measurement process. The synergistic and symbiotic feedback control-loop between applications and measurements is a novel technical direction with high potential pay-off in terms of creating applications with new and enhanced capabilities. Thus DDDAS creates the potential to transform the way science and engineering are done, and to induce fundamental and major advances in the way processes are modeled, designed and implemented, and in the way many functions in our society are conducted in numerous broad arenas such as manufacturing, commerce, transportation, hazard prediction/management, and medicine, to name a few. Enabling DDDAS requires multidisciplinary and synergistic research in the areas of applications, statistical and mathematical algorithms, measurement methods, and software methods, aimed at creating this new generation of dynamic/adaptive applications and measurements systems.

The 2005 DDDAS program solicitation formalized a series of efforts we launched a few years ago to foster the DDDAS concept and to start developing the new capabilities in applications and measurements ensuing from the DDDAS concept. These efforts included a March 2000 NSF sponsored workshop as well as seeding efforts, primarily through the NSF ITR Program.

Building upon these preceding activities, the objectives of the planned workshop are: 1) provide an interaction forum for current and other potential stakeholders of DDDAS technologies, 2) engage other communities which have applications of great national and technical importance that can benefit from the DDDAS concept, and 3) provide assessments and additional recommendations with respect to long-term, high-impact strategies and enhancements of the opportunities provided to the community to pursue DDDAS related research and other technology development. The workshop will include plenary presentations, panels and working group sessions. A summary of the workshop discussions will be posted on the DDDAS website for the benefit of the broader community.

We invite you to participate in the workshop because of your expertise and interest in an area relevant to the topics to be addressed in the workshop. The workshop invitees include DDDAS PIs and co-PIs, and other researchers and agencies' officials. This is a "by invitation only" workshop; please do not pass this invitation to others. Participants are expected to cover their own travel, meals and lodging costs. To register, no later than **December 9, 2005**, please access http://www.nsf.gov/cise/cns/dddas/2006_Workshop/form.cfm and provide the information requested there. For questions please email: DDDAS2006Workshop@nsf.gov . You will receive a meeting agenda by December 15, 2005.

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